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AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims 1-203 indicated as cancelled:

1-203 (Cancelled)

204. (New) A SEM compatible sample container comprising:
a sample enclosure including:
an electron beam permeable, fluid impermeable membrane; and
a peripheral enclosure sealed to said membrane and defining with said membrane said sample enclosure; and
a sample enclosure closure for sealing said sample enclosure.

205. (New) A SEM compatible sample container according to claim 204 and wherein said sample enclosure closure comprises quick-connect attachment functionality for sealing engagement with said sample enclosure.

206. (New) A SEM compatible sample container according to claim 205 and wherein said quick-connect attachment functionality comprises a threaded connection.

207. (New) A SEM compatible sample container according to claim 204 and wherein said peripheral enclosure is at least partially electrically conductive.

208. (New) A SEM compatible sample container according to claim 204 and also comprising a pressure relief diaphragm associated with said sample enclosure.

209. (New) A SEM compatible sample container according to claim 204 and also comprising at least one membrane support grid supporting said membrane.

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210. (New) A SEM compatible sample container according to claim 204 and wherein said membrane is formed from a material selected from the group comprising polyimide, polyamide, polyamide-imide, polyethylene, polypyrrole, PARLODION, COLLODION, KAPTON, FORMVAR, VINYLEC, BUTVAR, PIOLOFORM, PARYLENE, silicon dioxide, silicon monoxide and carbon.

211. (New) A SEM compatible sample container according to claim 205 and wherein said sample enclosure is preassembled and ready to receive a sample therein, following which said sample enclosure closure may be readily sealingly joined thereto by means of said quick-connect attachment functionality.

212. (New) A SEM compatible sample container according to claim 204 and wherein said sample enclosure is configured for containing a sample at a depth which is not permeable by electrons having an energy level of less than 50KeV.

213. (New) A SEM compatible sample container according to claim 204 and wherein said sample enclosure comprises an outer enclosure arranged about said peripheral enclosure and defining an aperture for electron communication through said membrane with the interior of said sample enclosure.

214. (New) A SEM compatible sample container according to claim 204 and also including a sample positioner arranged to position a sample adjacent to said membrane.

215. (New) A SEM compatible sample container according to claim 214 and wherein said sample positioner comprises a spring.

216. (New) A SEM compatible sample container according to claim 204 and also including at least one portion of a light guide.

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217. (New) A SEM compatible sample container according to claim 216 and wherein said light guide is arranged to receive light from a sample in said sample enclosure during SEM inspection, said light guide being arranged with respect to said sample enclosure for collecting light from said sample.

218. (New) A method for performing scanning electron microscopy comprising:
placing a sample in a sample enclosure comprising:
an electron beam permeable, fluid impermeable membrane;
a peripheral enclosure sealed to said membrane and defining with said membrane said sample enclosure; and
a sample enclosure closure including quick-connect attachment functionality for sealing engagement with said sample enclosure;
sealing said sample enclosure with said sample enclosure closure;
placing said sample enclosure in a beam of electrons; and
analyzing results of interactions of said beam of electrons with said sample.

219. (New) A method for performing scanning electron microscopy according to claim 218 and also comprising removal of liquid from said sample enclosure prior to said sealing.

220. (New) A method for performing scanning electron microscopy according to claim 218 and also comprising addition of liquid to said sample enclosure prior to said sealing.

221. (New) A method for performing scanning electron microscopy according to claim 218 and also comprising incubation of said sample in said sample enclosure.

222. (New) A method for performing scanning electron microscopy according to claim 218 and also comprising positioning a sample positioner arranged to position said sample adjacent to said membrane.

223. (New) A method for performing scanning electron microscopy according to claim

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218 and wherein said analyzing results of interactions of said beam of electrons with said sample is performed by at least one of:

- detection of X-rays;
- detection of light in the ultraviolet to infrared range;
- detection of backscattered electrons; and
- detection of secondary electrons.

224. (New) A method for performing scanning electron microscopy according to claim 218 and wherein said analyzing results of interactions of said beam of electrons with said sample comprises displaying an image of at least one portion of said sample.

225. (New) A method for performing scanning electron microscopy according to claim 218 and wherein said sample is a biological sample.